

UNC RESEARCH and COMMERCIALIZATION

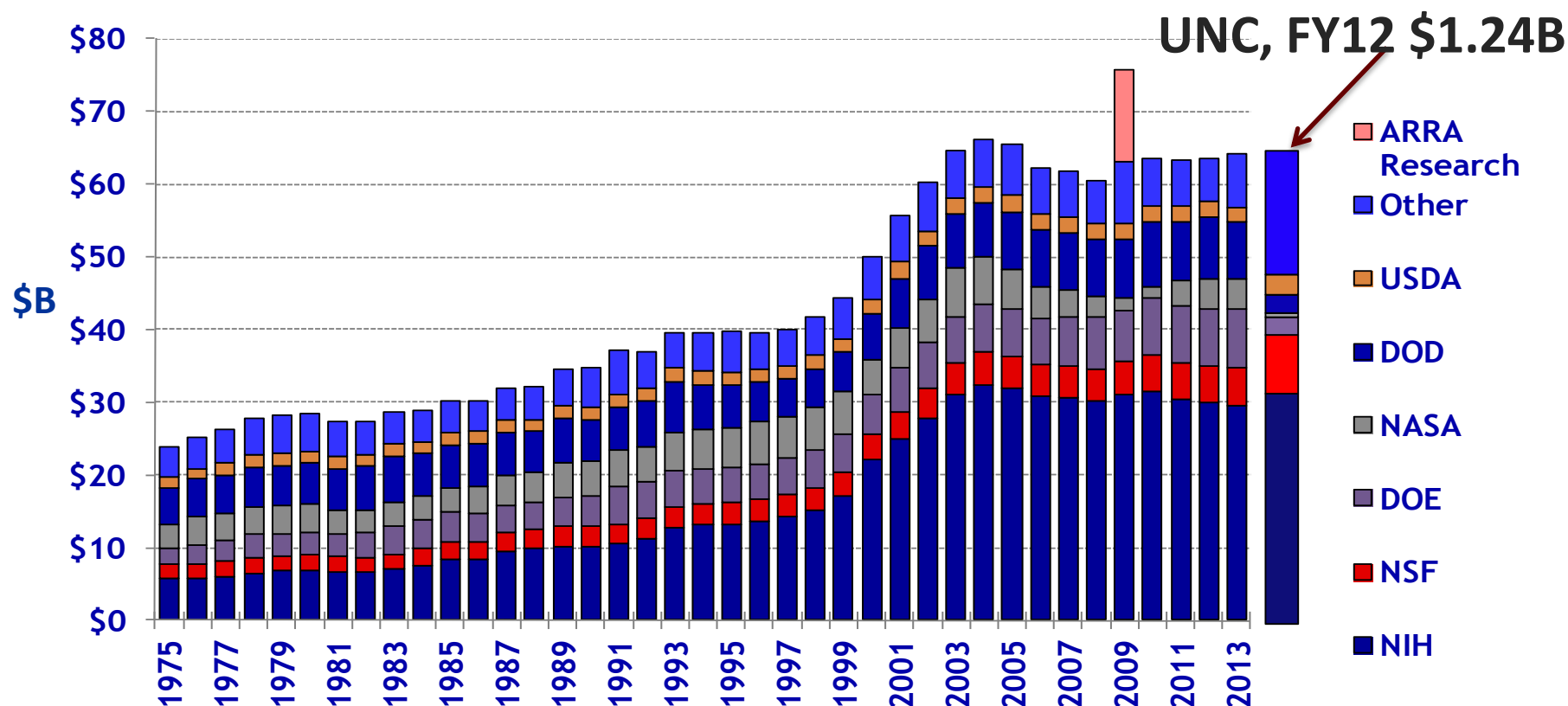
**A Presentation to the
Joint Economic Development & Global Engagement Oversight Committee
March 6, 2014**

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Vice President for Research and Graduate Education
University of North Carolina**

- Research is integral to all three parts of the UNC **mission**
- Takes place at **all UNC institutions**
- **Faculty** are key in carrying out fundamental & applied research
- **Students** (graduate and undergraduate) conduct research and benefit from it
- **Instruction** for students and **engagement** with the community is enhanced by research, and *vice-versa*
- Research **requires and generates resources**
- Research enhances **economic growth** and creates **societal good** (cures, treatments, products, jobs, policies, understanding)

Trends in Research by Agency, FY 1975-2013

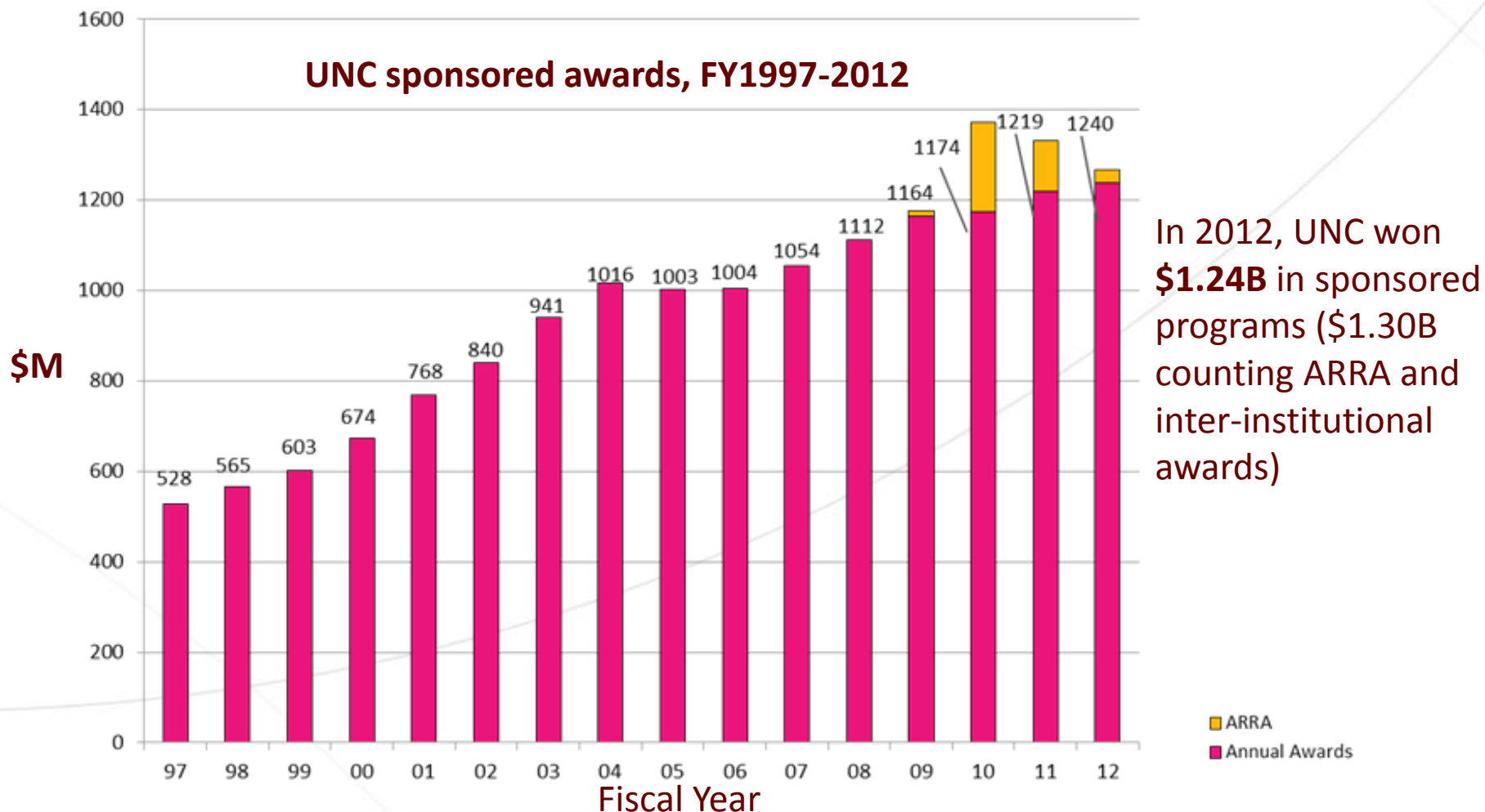
Billions of FY 2012 Dollars



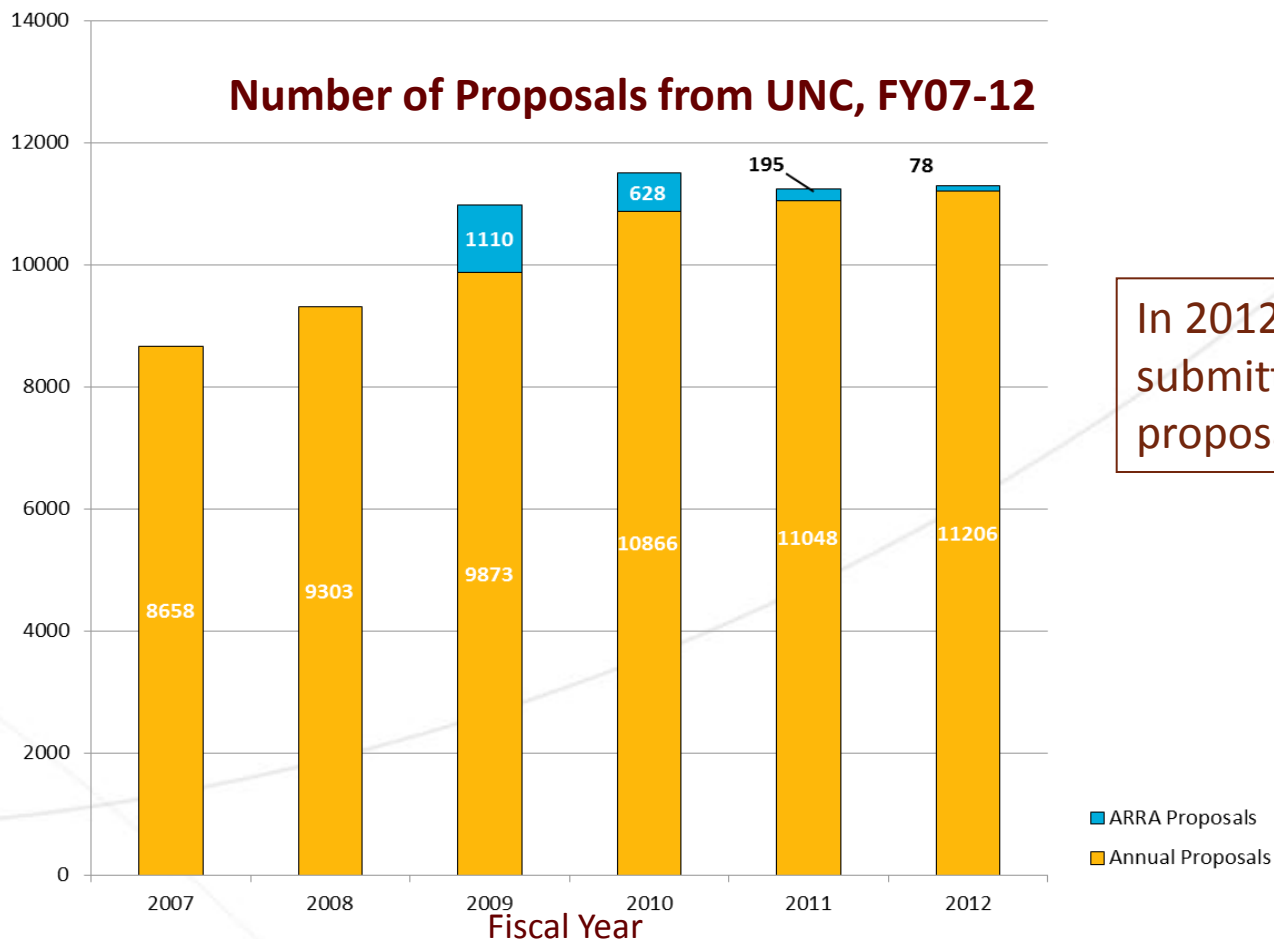
Source: 1975-1994 figures are from the NSF federal funds survey; remainder is from AAAS R&D reports. FY 2012 figures are latest estimates, FY 2013 is the President's budget.

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Research requires funding and UNC is competitive

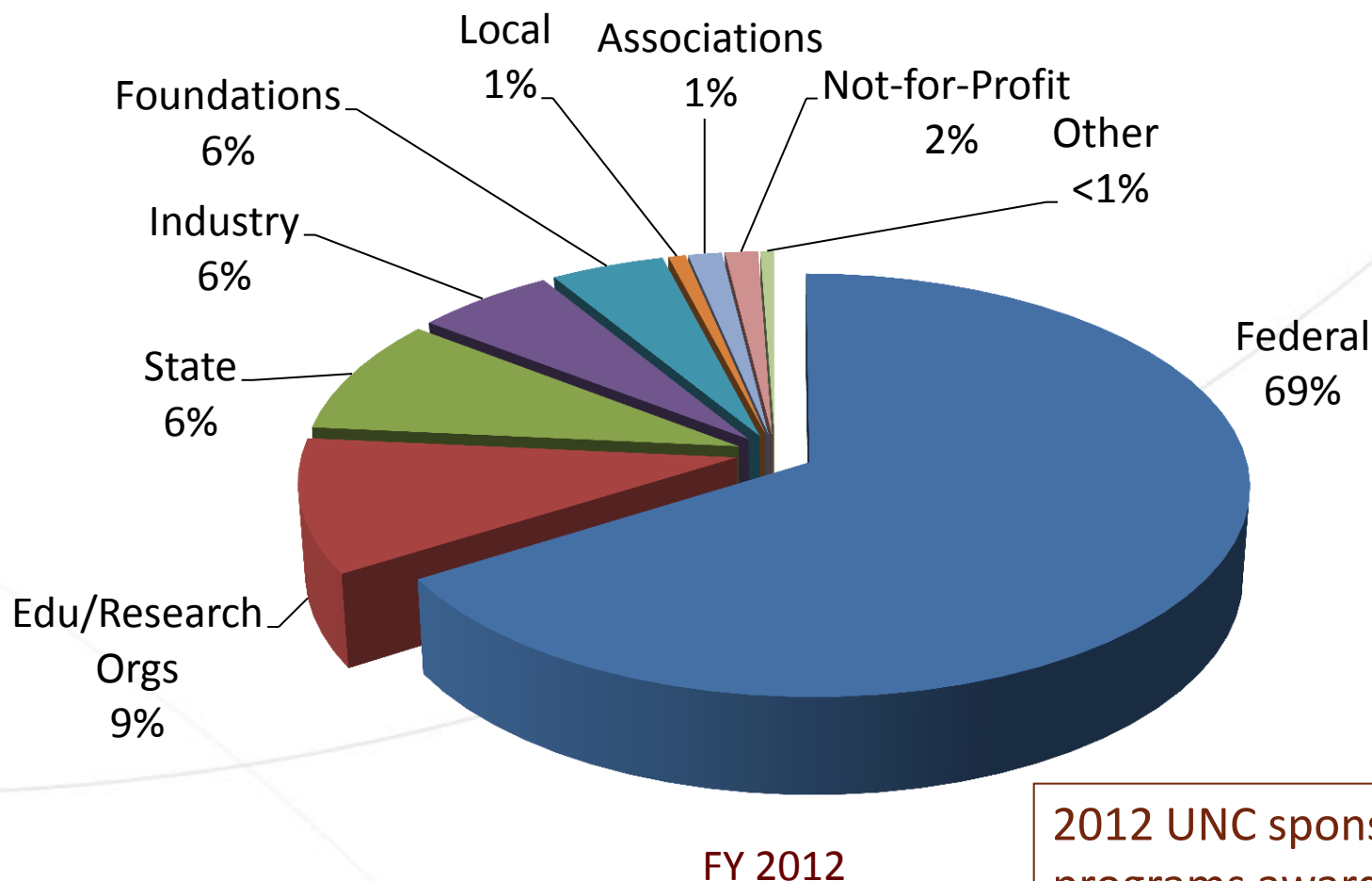


Submitting proposals is necessary and time-consuming



In 2012, UNC submitted 11,284 proposals for funding

Funding for sponsored activity comes from a variety of sources



2012 UNC sponsored
programs awards = **\$1.24B**

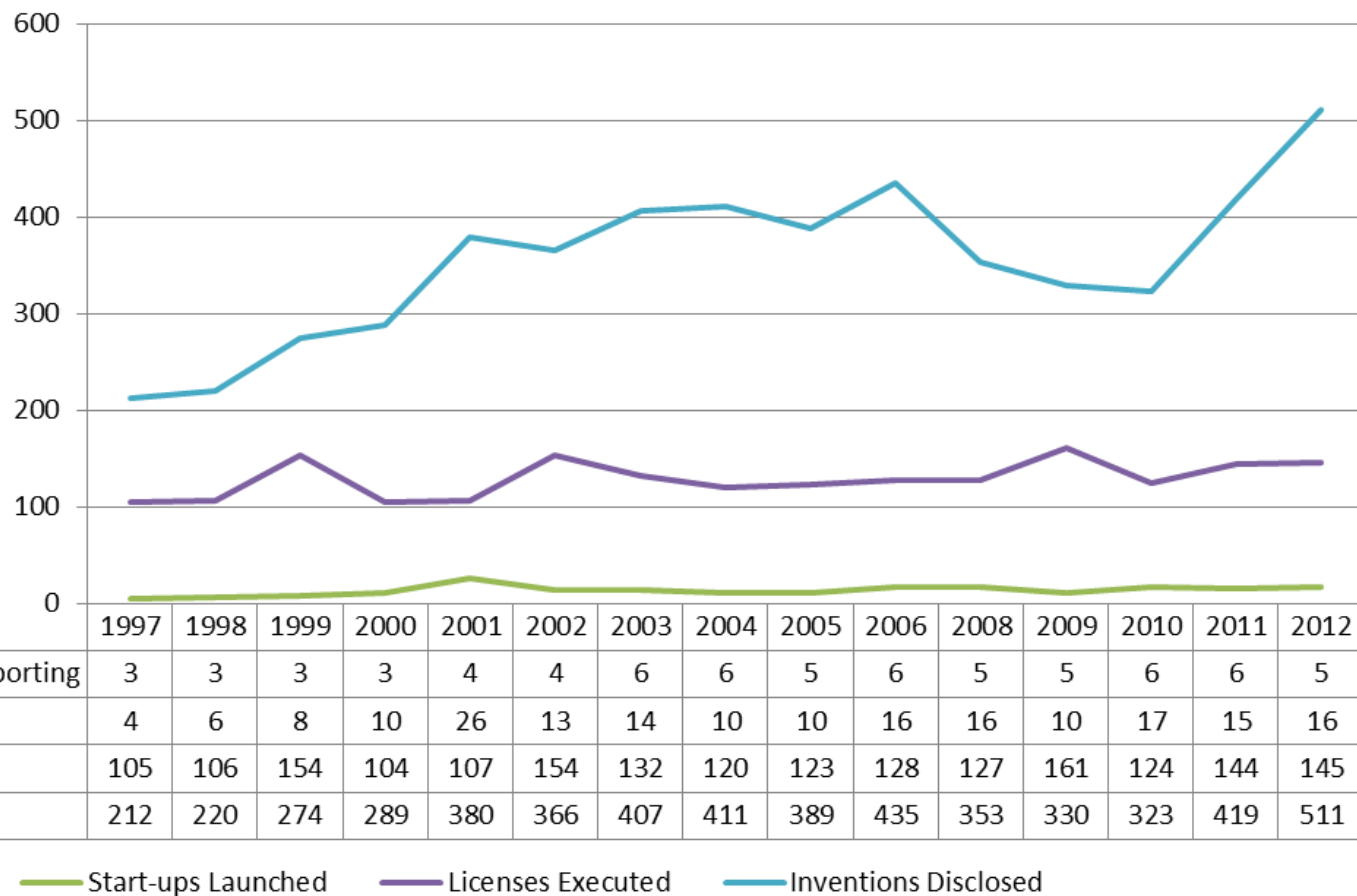
Campuses vary in their research funding
Graduate students are important

Institution	FY12 Sponsored Awards	Percent FY12 Total	Research doctoral degrees awarded, 2011-2012
UNCCH	\$ 755,360,421	61%	495
NCSU	\$ 241,053,249	19%	446
NCA&TSU	\$ 50,307,577	4%	29
ECU	\$ 37,522,242	3%	39
UNCG	\$ 30,187,111	2%	113
UNCC	\$ 25,048,856	2%	118
NCCU	\$ 19,565,564	2%	0
UNC GA	\$ 15,862,320	1%	NA
ECSU	\$ 12,463,129	1%	0
UNCW	\$ 12,422,541	1%	15
WSSU	\$ 11,410,721	1%	NA
FSU	\$ 10,383,704	1%	1
ASU	\$ 9,684,798	1%	13
WCU	\$ 3,960,567	<1%	5
UNCP	\$ 2,772,325	<1%	NA
UNCA	\$ 1,231,233	<1%	NA
NCSSM	\$ 282,300	<1%	NA
UNCSA	\$ 28,500	<1%	NA
TOTAL	\$ 1,239,547,157	100%	1274

*Support for research is **NOT** a given*

- Flat federal funding for research
- Increased reporting/compliance rules and regulations
- More funding for large, **multi-institutional**, multi-disciplinary centers to tackle big problems, take on grand challenges of the world, make a difference
- Funding agencies looking for broader impacts, commercial possibilities, societal benefits
- Fundamental research emphasis has shifted from industry to universities

Trends in Commercialization Indicators



stasilon[®]
HEMOSTATIC DRESSING

QUINTILES[®]



Invincibelle[®]
Pink Hydrangea



A True Fluency Device
SpeechEasy[™]



sas[®]
TM



TORNIER
SURGICAL IMPLANTS



CREE[®]



MegaWattSolar

Aseptia

fhi360
THE SCIENCE OF IMPROVING LIVES



ps
PREVENTION STRATEGIES

UNC RESEARCH ATTRACTS TALENT, DRIVES START-UPS AND SPIN-OFFS AND BUILDS NORTH CAROLINA'S ECONOMY

\$884
MILLION
annual revenues

OVER
10,000
UNC JOBS

11TH
NATIONALLY
in R&D

IN ALL
100
counties

1,100
NC supplier
businesses

\$300
MILLION
annual payroll

WHAT DOES OUR STARTUP ACTIVITY LOOK LIKE NOW?

50%
YIELD*

1,494
U.S.
PATENTS
FILED

752
U.S.
PATENTS
ISSUED

2,886
FOREIGN
PATENTS
FILED

1,536
FOREIGN
PATENTS
ISSUED

53%
YIELD*

2,873

INVENTION DISCLOSURES

UNC-CH TECH
TRANSFER ACTIVITY
THROUGH FY13

* UNC PATENT YIELD
RATE. ESTIMATED AT
5% NATIONALLY

STARTUPS

81 COMPANIES
320 LICENSES EXECUTED
\$5.6M REVENUE (FY09-13)

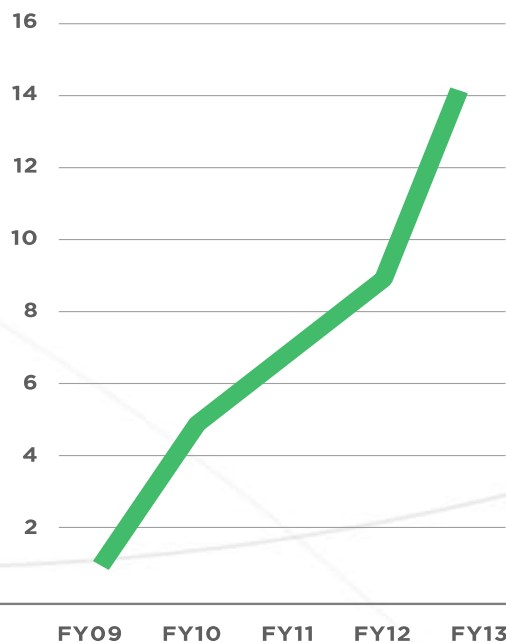
EXISTING COMPANIES

279 LICENSES
501 LICENSES EXECUTED
\$14.3M REVENUE (FY09-13)

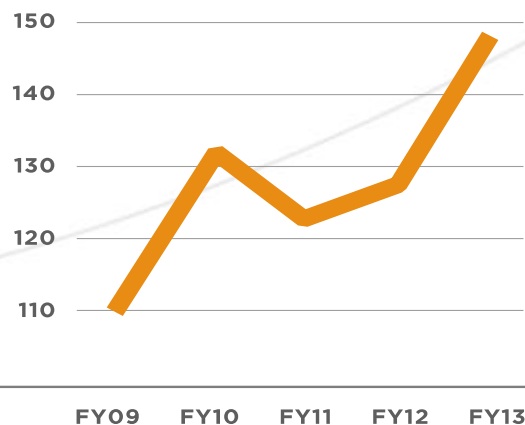
IMPACT RISING

FY09-FY13

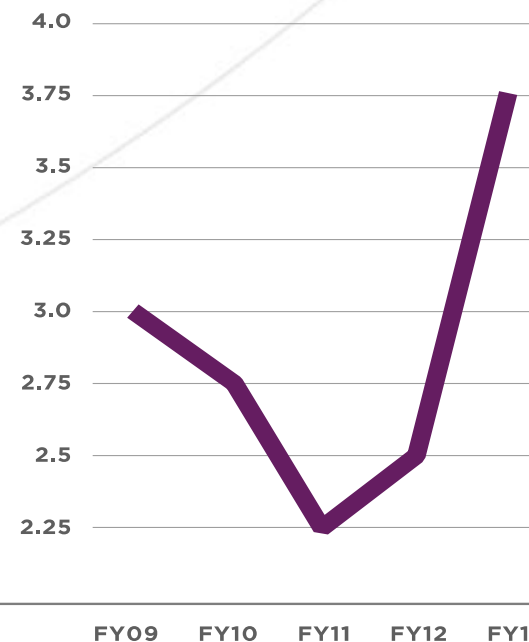
NUMBER OF STARTUPS



**NUMBER OF US
PATENTS FILED
(INCLUDES PROVISIONAL)**



**LICENSE INCOME
(IN MILLIONS)**



UNC STARTUPS



93
NEW
BUSINESSES

NC State IP by the Numbers – 1984 to Date

3,400+ Invention
Disclosures

Licensing Team

1,445 U.S. Patent
Applications

USPTO

837 U.S. Patents
(271 pending)

Robust assessment –
patents filed on only
25% of disclosures

Marketing efforts leverage
online and social
networking tools

STARTUPS & SPIN-OFFS

- 100+ Startups & Spin-offs
- 98 Licenses
- \$1.5B in Venture Capital
- 16 Products to Market
- **7,100+ Jobs**
- \$2.8M in licensing revenue*

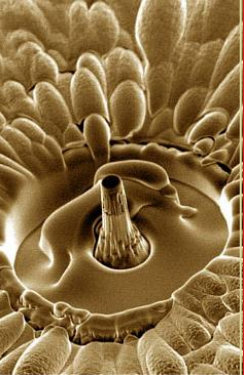
EXISTING COMPANIES

- 1,594 Licenses
- 855 Licensees
- **439 Products to Market**
- **\$25.6M in licensing revenue***

Over the last 5 years, **53%** of NC
State patents licensed compared
to an estimated 5% nationally.

*Source: "Universities struggle to make patents pay."
Nature News. September 24th, 2013.*

*FY09 – FY13

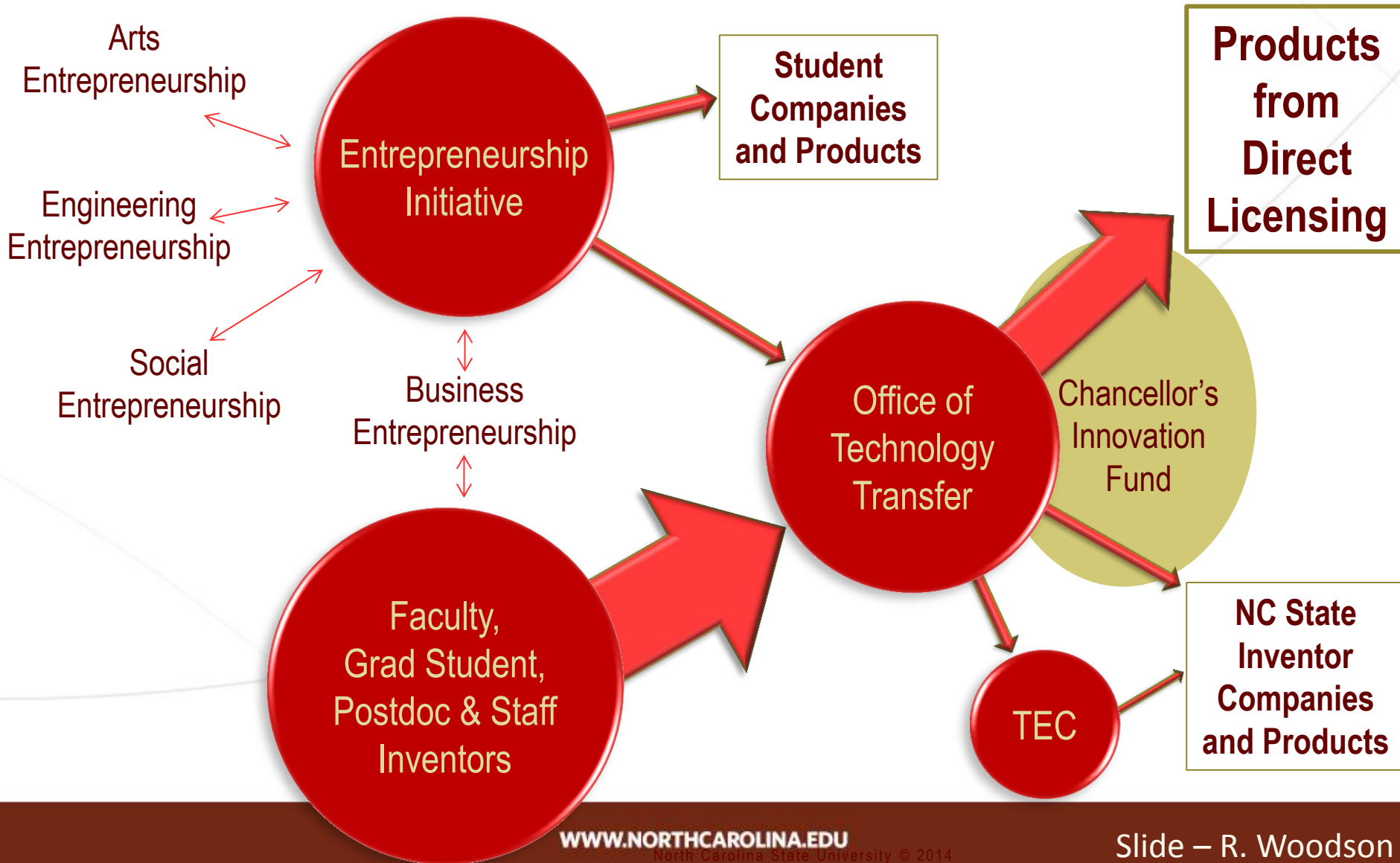


Accelerating Impact: Technology Transfer Activity

	<u>FY 2013</u>	<u>5 Year Average*</u>
Invention Disclosures	238	168
Patents Issued	117	80
U.S. Patents Filed	145	137
Commercialization Agreements	111	80
Startups	8	6
Licensing Revenue	\$6.8M	\$5.0M

NC State is among only 16% of universities nationwide that earn enough from their licensing activity to sustain their technology transfer operation and patent budget

NC State Innovation and Entrepreneurship Ecosystem





Startups Based on NC State Technology

Web**Assign**®



NOVOCOR
MEDICAL SYSTEMS



LIPO**SCIENCE**

CREE 



BioResource International, Inc.

Going Forward

- **Support game-changing research**
- **Convert discovery into innovation**
- **Recruit and retain great faculty**
- **Address policy barriers**
- **Prepare students**